SPECTRUM®

MicroMMAC-T
Management Module Guide

CABLETRON SYSTEMS

The Complete Networking Solution™

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Preface

Use this guide if you are going to manage a MicroMMAC-T hub through SPECTRUM. Before reading this guide, you should be familiar with SPECTRUM's functions as described in the Operations and Administration documentation.

What Is in This Guide

This guide is organized as follows:

Chapter	Description
Chapter 1 **Introduction**	Describes the management module and model types.
Chapter 2 **Device View**	Describes the Device View's three different representations of a .
Chapter 3 **Configuration Views**	Describes the configuration views for the model and the network management information provided by each view.
Chapter 4 **Event and Alarm Messages**	Contains a listing and explanation of the alarm and event messages generated in the Event Log or Alarm View for the model type.
Chapter 5 **MicroMMAC-T Network Application**	Describes the Network application in the MicroMMAC-T's Application view, which allows you to view information relating to the ring in which the MicroMMAC-T is installed.

Conventions

In this manual the following conventions are used.

- Command names are printed in **bold**; for example, **Clear** or **Save & Close**.
- Menu selections to access a view are printed in **bold**; for example, **Configuration** or **Detail**.
- Buttons are represented by a shadowed box; for example, **Help** .

Related SPECTRUM Documentation

Refer to the Operations and Administration documentation, as well as the following for more information on using SPECTRUM:

SPECTRUM Report Generator User's Guide

SPECTRUM AutoDiscovery User's Guide

Getting Started with SPECTRUM for Operators

Getting Started with SPECTRUM for Administrators

How to Manage Your Network with SPECTRUM

Other Related Documentation

LAN Troubleshooting Handbook, Mark Miller (1989, M&T Publishing, Inc.)

Local Area Networks, Architectures and Implementations, James Martin & Kathleen K. Chapman for the Arben Group, Inc. (1989, Prentice-Hall, Inc.)

The Simple Book — An Introduction to Management of TCP/IP-based Internets, Marshall T. Rose, Performance Systems International, Inc.

Computer Networks, Andrew S. Tanenbaum, Prentice-Hall, Inc.

Internetworking Technology Overview, Cisco Systems, Inc. (1993, Cisco Systems, Inc.)

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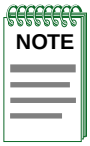
Chapter 1

Introduction

What Is in This Chapter

This chapter describes the SPECTRUM Management Module for the MicroMMAC-T. It also provides the model type names assigned to the MicroMMAC-T in SPECTRUM. The model type name refers to the template used to specify attributes, actions, and associations for device models in SPECTRUM.



If you are running a previous version of SPECTRUM, the following user interface aspects may differ from those in SPECTRUM version 4.0:

- *Order and names of menu selections*
- *Navigational features (mouse button functionality)*

For information about menu selections and navigating within previous versions of SPECTRUM, refer to the SPECTRUM System User's Guide*. For information about menu selections and navigating within SPECTRUM refer to the Operations documentation.*

MicroMMAC-T Management Module

The MicroMMAC-T Management Module supports all MicroMMAC-T device models managed through the SNMP advanced network management agent. SPECTRUM bases its management of these devices on the Management Information Base (MIB), which comes as part of the management module. The SPECTRUM model type name of the device is **BRtrCSIuMMACT.** The MicroMMAC-T is a Cabletron Systems Micro Multi Media Access Center (uMMAC) Multi-Port Intelligent Bridging Routing Module.

The MicroMMAC-T provides management for up to four non-intelligent stackable Token Ring hubs. The MicroMMAC-T supports one optional Bridging Routing Interface Module (BRIM) which bridges packets from one transmission type to another (e.g., Ethernet to FDDI network backbones, Ethernet to Wide Area, etc.). Optional BRIMs are as follows:

- **BRIM-W**: Wide Area Network
- **BRIM-F**: FDDI Dual Attached Station (DAS) connection

When a BRIM is inserted into a MicroMMAC-T chassis, the icon dynamically changes from a hub icon to a bridging icon.

MicroMMAC-T Applications

The MicroMMAC-T supports both common and device-specific applications described in ***MIB II Applications***, ***Bridging Applications*** and ***Miscellaneous Applications***. SPECTRUM management of the MicroMMAC-T utilizes the following Management Information Bases (MIB's) which come as a part of the software module for the model type:

- Ct_Bridge MIB•
- Internet MIB-II (RFC 1213)
- CtChassis MIB•
- IETF Bridge MIB (RFC 1286)
- CtDevice MIB•
- RS232 MIB (RFC 1317)
- CtDownload MIB•
- DS1 Interface MIB (RFC 1406)
- Cabletron Dot5 MIB
- Cabletron Dot5 Physical MIB

RMON and DLM are also supported, and may be purchased separately. The following chapters explain how you use SPECTRUM and the management module software to monitor a MicroMMAC-T.

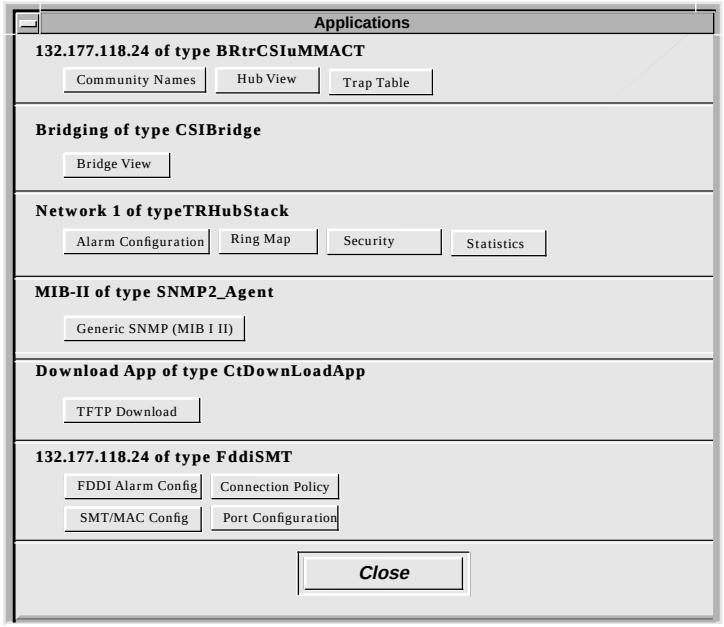
MicroMMAC-T and SPMA

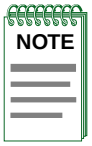
SPECTRUM also provides SPMA (SPECTRUM Portable Management Application) functionality for the MicroMMAC-T. To open the SPMA Application view from any SPECTRUM view, do the following:

1. Select **Icon Subviews** from the View menu.
2. Select **Utilities** from the Icon Subviews menu.
3. Select **Applications** from the Utilities menu.

The SPMA Applications view provides buttons to select SPMA-specific views and dialog boxes. An example of an SPMA Applications view is provided below.

Figure 1-1. SPMA Applications View





The SPMA Applications view will contain the Bridging and FDDI applications only when a FDDI BRIM is installed. Likewise, if a WAN BRIM is installed in the MicroMMAC-T, Bridging and WAN applications appear in the SPMA Applications view.

SPMA for the MicroMMAC-T is described in the *SPECTRUM Portable Management Application for the MicroMMAC-T User's Guide*, the *SPECTRUM Portable Management Application for the MicroMMAC-T Tools Guide*, and the *Portable Management Application for the Bridge/Router Interface Modules (BRIMs) User's Guide*.

For details on the Hub view, Ring Map view, Alarm Configuration view, Statistics view, and Ring Security Configuration view, refer to the *SPECTRUM Portable Management Application for the MicroMMAC-T User's Guide:*

- Chapter 2, *Using the MicroMMAC-T Hub View*, describes the visual display of the Hub and explains how to use the mouse within the Hub view; the operation of some basic functions available only from the Hub view are also described.
- Chapter 3, *Ring Map*, describes the Ring Map window, the Management Station Configuration window and the Ring History Information window.
- Chapter 4, *Alarm Configuration*, describes how to set and view Ring and Station alarms.
- Chapter 5, *Statistics*, describes viewing the Ring Station List, monitoring Ring and Station Statistics, and Ring and Station variables.
- Chapter 6, *Ring Security Configuration*, describes how to launch the Security Configuration Window, building the Allowed List, and adding and deleting stations from the Allowed and Disallowed Lists.

For details on the MIB I,II views, Community Names view, TFTP Download view, and Trap Table view, refer to the *SPECTRUM Portable Management Application Tools Guide*:

- Chapter 2, *Using the MIB I, MIB II Tool*, explains how to use this tool to view and change MIB I and MIB II object ID values.
- Chapter 3, *Using the Community Names Tool*, explains Cabletron's "Component" structure of device MIBs, and describes how to change device community names.
- Chapter 5, *Using TFTP Download Tool*, explains how to upgrade firmware on Cabletron devices equipped with Flash EEPROMs.
- Chapter 6, *The Traps Table Tool*, explains how to establish which network management workstations on your network will receive trap alarms from a selected device, and also provides a brief overview of some of the traps supported by Cabletron Systems' devices.
- Chapter 7, *Using Charts and Meters*, explains how to launch charts or meters (used to analyze device statistics) from a UNIX prompt, and control the Meter Tool's display.

- Chapter 8, Configuring and Monitoring an Uninterruptible Power Supply, introduces the UPS sustem (which connects a computer interface port to an intelligent MIM) and explains how to start, configure, and monitor the UPS Tool.
- Chapter 9, *Using DLM*, explains how to manage "smart hub" devices, or DLM Servers, on your network. Accessing the DLM Application and its windows, adding/deleting DLM entries, and managing DLM is also described.
- Chapter 10, *Using the Path Tool*, explains how to generate a list of router hops between a managed Cabletron device and a remote destination, and display specific information about each hop found in the router path.
- Chapter 11, *MIB Tree/MIB Tools*, provides an overview of the MIB Browser, the MIB Details tool, the MIB Editor, and browsing the MIB Tree.

For details on the Bridge view, FDDI Alarm Configuration view, Connection Policy view, Station List view, SMT/MAC Configuration view, and the Port Configuration view, refer to the *SPECTRUM Portable Management Application for the Bridge/Router Interface Modules (BRIMs) User's Guide*.

- Section 1:*General Information*
  Chapter 3, *Using the Bridge View*, describes Bridge Traffic and Detail view, details how to configure bridge parameters and describes Bridge Filtering and Special Databases.
- Section 2: *FDDI Applications*
  Chapter 4, *Viewing Port Configuration*, describes how to enable and disable BRIM ports and details other features of the Port Configuration view.

  Chapter 5, *Alarm Configuration*, details how to set alarm threshold and describes the the fields within the Alarm Configuration view.

  Chapter 6, *Viewing SMT/MAC Configuration*, describes the fields in the SMT/MAC Configuration view, the MAC Chart, and the MAC Meter.

  Chapter 7, *Configuring the SMT Connection Policy*, describes the connections allowed among the four FDDI port types: A, B, M (Master), and S (Slave).

  Chapter 8, *Viewing the Station List*, details how to confugure physical ports on your BRIM, as well as how to configure PPP protocol and the Frame Relay protocol. It also describes the assignment of protocols to interfaces, and how to add circuits to the Frame Relay protocol.

Chapter 2

Device View

What Is in This Chapter

This chapter provides a description of the Device view for the MicroMMAC-T Management Module. This description includes an explanation of how to use the Device view to see the interface, chassis, and physical representations of the MicroMMAC-T, access SPECTRUM generic views, and monitor performance.

Overview

The Device view can be viewed from the three perspectives described below:

- The Chassis view displays a logical view of the MicroMMAC-T chassis, its interfaces, and the other stacked chassis. From this view you can obtain performance, configuration, and status information about the modules; the stack (e.g., Network 1); and the ports.
- The Interface view displays a logical view of the MicroMMAC-T's interfaces and provides access to information on their performance, status, and configuration.
- The Physical view displays a graphical representation of the device and its stack. This view provides access to module information only.

The Device Views show the MicroMMAC-T's settings. When these settings are modified, the display reflects those changes after the model's next polling cycle.

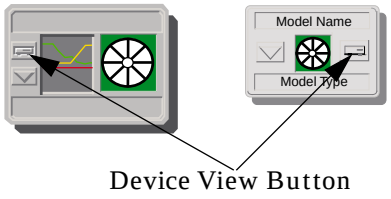
Chassis Device View

The MicroMMAC-T Chassis Device view, which displays a logical representation of each module in the stack, allows the user to access views for the modules and ports of the MicroMMAC-T.

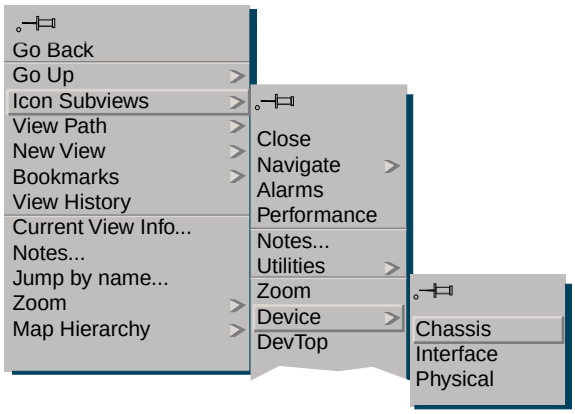
Accessing the Chassis Device View

Access the Chassis Device view using one of the following methods:

- Double-click on the Device view button of the MicroMMAC-T device icon. This will open the Device view that was opened last (i.e. Chassis, Interface, or Physical).



- Highlight the MicroMMAC-T device icon and select **Device -> Chassis** from the Icon Subviews menu.



The Chassis Device view has several fields that provide access to information about the module, the repeater stack, bridging, and the ports. Also, each representation of a port includes a gauge, which dynamically changes to display changes in traffic over that port as it occurs. Figure displays the fields in the MicroMMAC-T Chassis Device view.

Figure 2-1. MicroMMAC-T Chassis Device View

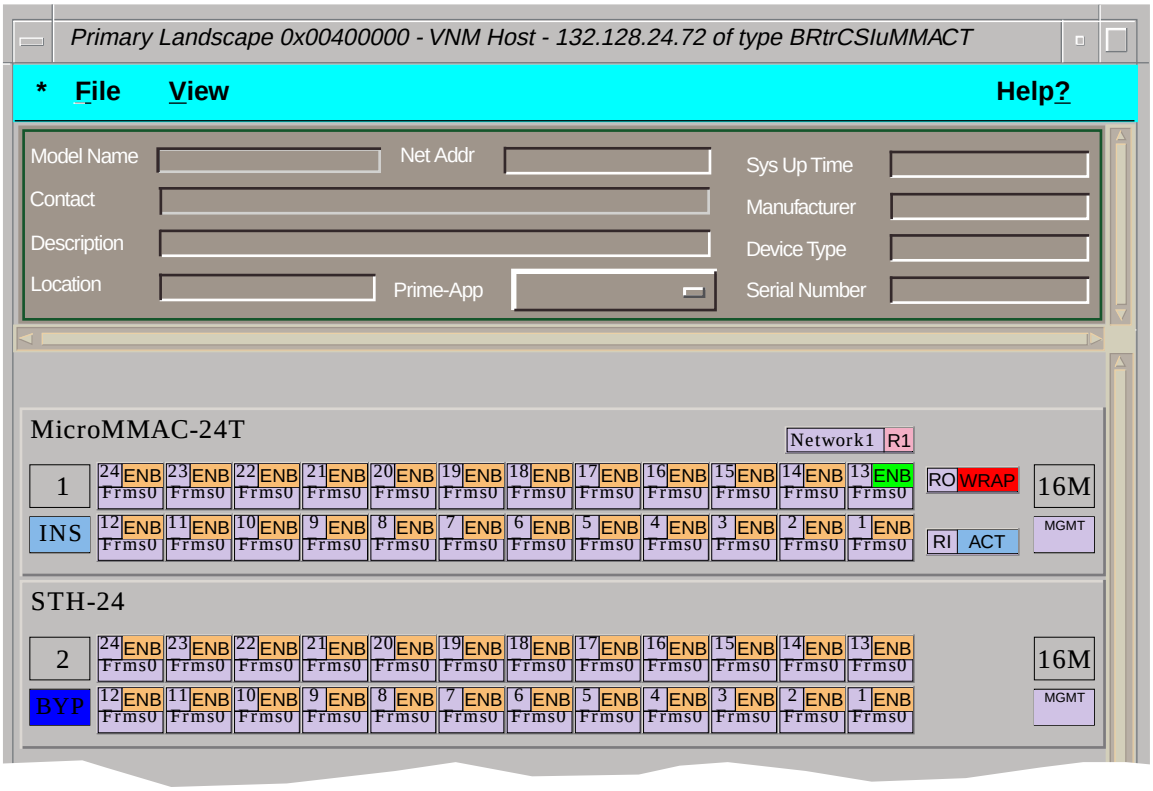
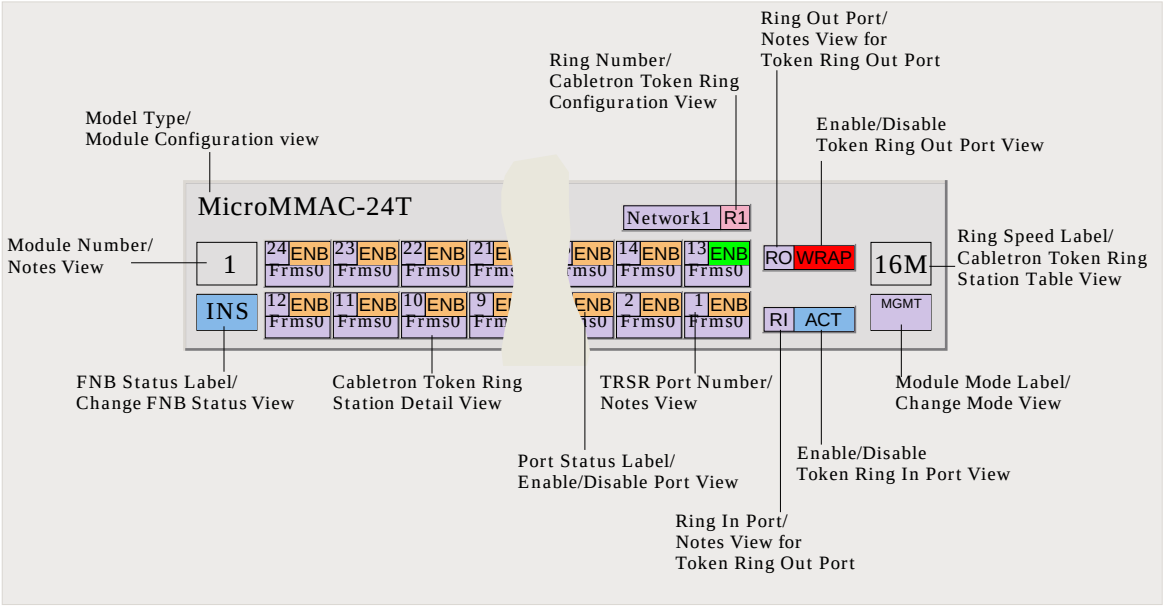


Figure provides a magnified view of the fields in the MicroMMAC-T Chassis Device view. Their related menus are described after the diagram.

Figure 2-2. Magnified Portion of MicroMMAC-T Chassis Device View



MicroMMAC-T Chassis Device View Icon Subviews

Access the following views either by accessing the Icon Subviews menu for the module or by double-clicking on the appropriate parts of the module icon.

Module Notes View
Allows you to write and save notes concerning the highlighted module.

Module Configuration View
Allows you to specify the Module Mode and Ring Speed for the module. The Module Configuration view also allows the user to Enable or Disable All Station Ports, All Ring Ports, and All Module Ports.

Change FNB Status
Allows you to Enable or Disable the FNB Status.

Change Module Mode
Allows you to choose Management or Auto for the highlighted module's mode.

Enable All Station Ports
Allows you to Enable or Disable all station ports.

Enable All Ring Ports
Allows you to enable or disable all of the Ring Ports.

Stack Icon Subviews

Stations
Opens the Cabletron Token Ring Station Table view. For more information about this view, please refer to Chapter 5, *The MicroMMAC-T Network 1 Application*.

Configuration
Opens the Cabletron Token Ring Configuration view. For more information on the Cabletron Token Ring Configuration view, please refer to Chapter 3, *Configuration Views*.

Stack DevTop
Opens the DevTop view for the MicroMMAC-T hubstack. For more information on the DevTop view, please refer to***SPECTRUM Views***.

Station Errors
Opens the Cabletron Token Ring Isolating Errors view. For more information about this view, please refer to Chapter 5, *The MicroMMAC-T Network 1 Application*.

Stack Model Information
Opens the Model Information view for the MicroMMAC-T. For more information on the Model Information view, please refer to***SPECTRUM Views***.

Stack Performance
Opens the Performance view for the MicroMMAC-T. For more information on the Performance view, please refer to ***SPECTRUM Views***.

Ring Port Icon Subviews

Port Notes
Opens the Notes view for the highlighted Ring Port. The Notes view allows you to write and mail notes concerning the Ring Port.

Port Configuration View
Opens the Ring Port Configuration view, allowing you to view and set configuration settings for the highlighted Ring Port.

Enable/Disable Ring Port
Allows the user to Enable or Disable the Ring In/Out port.

Bypass Ring Ports
Allows the user to choose On, Off, NotApplicable, or Illegal for the Bypass Ring Port status for the MicroMMAC-T.

Station Port Icon Subviews

Port Notes
Opens the Port Notes view, allowing you to write notes and email concerning the highlighted station.

Port Configuration
Opens the Station Port Configuration view, which displays characteristics of the highlighted station. For more information on this view, please refer to Chapter 3, *Configuration Views*.

Port Station MAC Address
Opens the Port Station MAC Address view, which displays the module and port numbers for the station port and allows you to enable or disable Port-to-Station Mapping.

Enable/Disable Port
Opens the Enable/Disable Port dialog box, allowing you to change the status for the highlighted port.

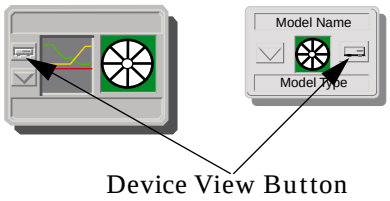
Interface Device View

This section describes the module information available from the Interface Device view, which displays a Device Icon Panel, an Interface Options Panel, and a Logical Interface icon. Access the Interface Device view by selecting **Device** from the Icon Subviews Menu or double-click the Device view button.

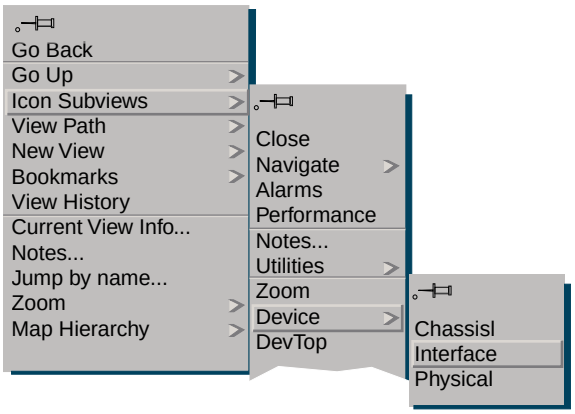
Accessing the Chassis Device View

Access the Interface Device view using one of the following methods:

- Double-click on the Device view button of the MicroMMAC-T device icon. This will open the Device view that was opened last (i.e. Chassis, Interface or Physical).

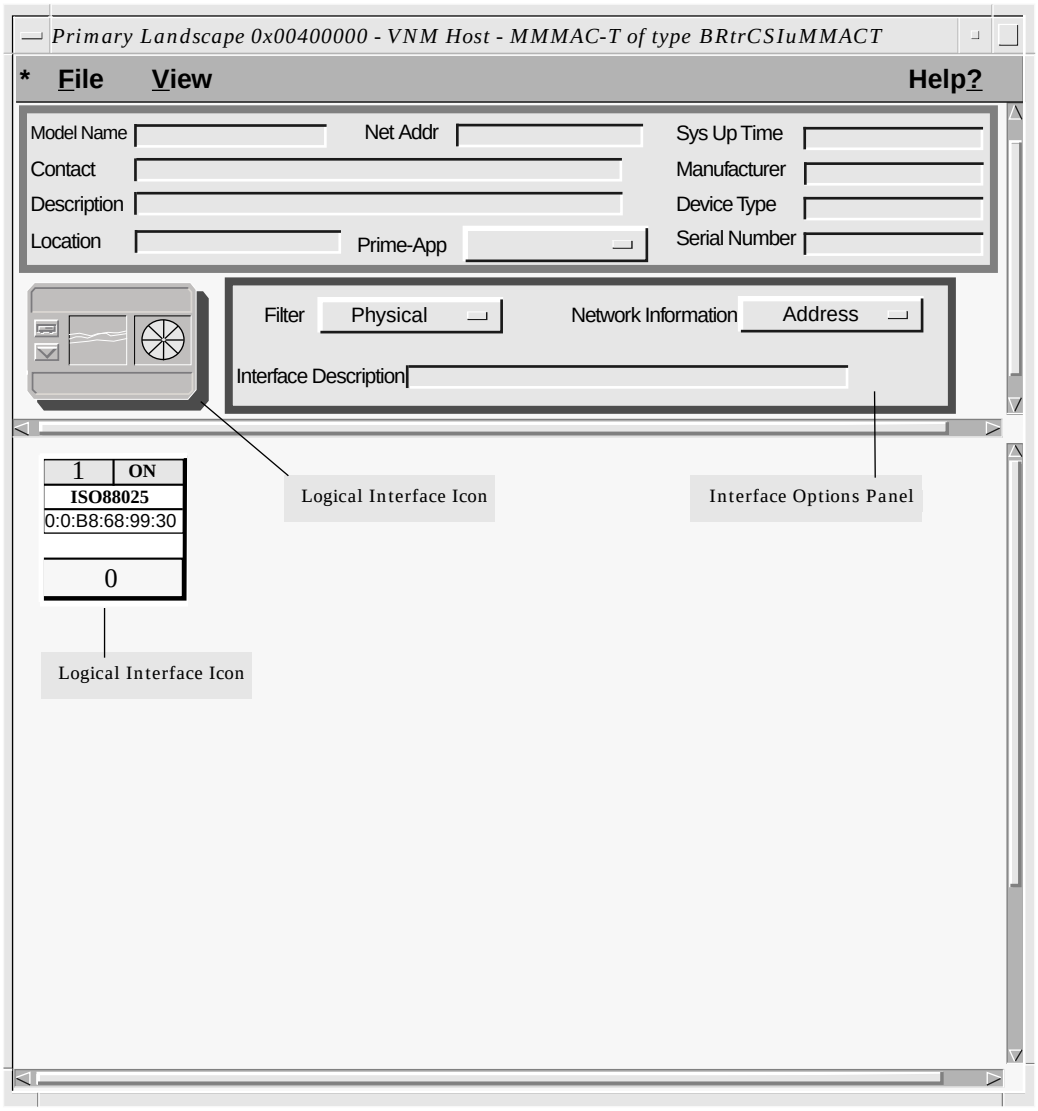


- Highlight the MicroMMAC-T device icon and select **Device -> Interface** from the Icon Subviews menu.



The Interface Device view includes three panels as well as the Device view Banner shown in Figure .

Figure 2-3. Interface Device View



Device Icon Panel

The Device Icon panel displays the MicroMMAC-T Location view icon. For more information on the Location view icon, please refer to ***SPECTRUM Icons.***

Interface Options Panel

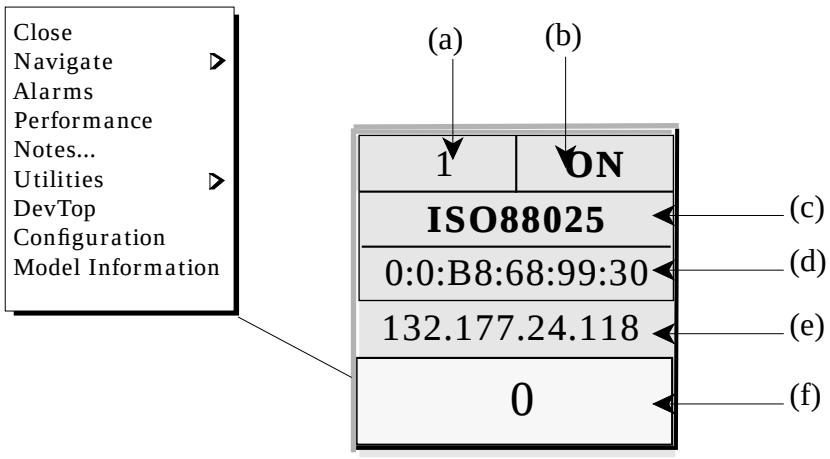
The Interface Option panel area of the Device view allows you to modify the presentation of the Logical Interface icon. It provides the fields described below as well as access to the Gauge Control Panel view.

Filter
The Filter area of the Interface Options panel is only implemented if the SPECTRUM Routing Services Management Module is loaded.

Network Information
The Network Information area of the Interface Options panel allows you to determine the interface information displayed in the Network Information Label zone of that interface's Logical Interface icon. Possible selections are ADDRESS, NAME, or MASK.

Interface Description
Selecting an Interface icon displays the type of interface in the Interface Description area of the Interface Options panel.

Logical Interface Icon



a)DevTop view/Interface Number Label

b)Port Configuration view/Interface Status Label

c)Interface Label

d)CSI Interface Port Model Information View/Physical Address Label

e)Network Information Panel/Network Information Label

f) CSI Interface Performance view/Logical Gauge

Device Topology View/Interface Number Label

This label displays the number of this interface. Double-clicking on this label allows you to access the MicroMMAC-T Device Topology (DevTop) view.

Port Configuration View/Interface Status Label

The Interface Status label displays a text label and an appropriate background color to represent the current status of the interface. Table 2-1 shows the possible interface statuses and their respective colors.

Table 2-1. Interface Status Label Definitions

Operational Status	Administrative Status	Text Display	Color
ON	ON	ON	Green
OFF	OFF	OFF	Blue
OFF	ON	OFF	Yellow
TESTING	TESTING	TEST	Red

The Interface Status label provides access to Configuration views specific to the port. Double-clicking on this label opens the Interface Port Configuration view. This view provides the following information:

Interface Index
The unique identifier of this interface.

Interface Type
The type of interface for the port.

Operation Status
The current operating condition of the selected port. Possible operation states are On, Off, and Test.

Admin. Status
The current administrative state of the selected port. Possible administrative states are On, Off, and Test.

IF Description
A textual description of the interface.

Port Type Label

The Port Type label displays the type of MicroMMAC-T interface. Possible interface types are shown in Table 2-2.

Table 2-2. Interface Types for the MicroMMAC-T

Interface Type	Description
other	None of the following
regular1822	Regular 1822
hdh1822	HDLC Distant Host protocol
ddn-X25	Defense Data Network X.25
rfc877-x25	RFC877 X.25
ethernet-csmacd	Ethernet CSMA/CD
iso88023-csmacd	ISO CSMA/CD
iso88024-tokenRing	ISO token bus
iso88025-tokenRing	ISO token ring
iso88026-man	ISO man
starLan	StarLAN IEEE 802.3
proteon-10Mbit	ProNET 10 Mbps
proteon-80Mbit	ProNET 80 Mbps
HyChan	Hyperchannel
fddi	Fiber Distributed Data Interface
lapb	X.25 Line Access Procedure, Balanced
sdlc	IBM Synchronous Data Link Control protocol
ds1	T1 link (USA and Japan)
CEPT	T1 link (Europe)
basicISDN	Basic Integrated Services Digital Network
primaryISDN	Proprietary Integrated Services Digital Network
propPointToPointSerial	Proprietary Point to Point Serial
ppp	Point to Point protocol
softwareLoopback	Software Loopback
eon/CLNPoverIP	Connectionless Network Protocol over IP
ethernet-3Mbit	Ethernet 3 Mbps
nsip/XNSoverIP	Xerox Network Service Protocol over IP
slip	Generic Serial Line IP

Table 2-2. Interface Types for the MicroMMAC-T (Continued)

ultra	ULTRA Technologies
sip	Switched Multimegabit Data Service
frame-relay	T1 Frame relay

MAC Address Label/Interface Model Information View

The MAC Address label displays the physical address of the MicroMMAC-T interface. Double-clicking on this label accesses the CSI Interface Port Model Information view.

Network Information Label

This label displays the name, address, or subnet mask of this interface, according to selections made in the Interface Options panel, which is described in the next section. Double-clicking on this label displays the Network Information panel, which displays the name, address, and subnet mask of this interface.

Interface Performance View/Logical Gauge Label

Double-clicking on this label of the Interface icon allows you to access the Performance view for the interface. You can also access this view by highlighting the MicroMMAC-T icon and selecting **Performance** from the Icon Subviews menu. This area is also a Logical Gauge, which is described later in this chapter. The Performance view summarizes network traffic flow in packets for this interface, providing the following information:

Multi-Attribute Line Graph
The Multi-Attribute Line Graph provides a general indication of network activity. The attributes are pre-selected and use colors to represent different statistics. For more information on the Multi-Attribute Line Graph, refer to the ***SPECTRUM Views***. Table 2-3 lists the color and statistical definitions for each attribute.

Table 2-3. Color and Statistical Definitions for each Attribute

Statistic	Color	Description
% Transmitted	White	The percentage of the total number of packets that have been transmitted, device-wide, during uptime.
% Discarded	Orange	The percentage of the total number of packets that have been discarded, device-wide, during uptime.
% Error	Red	The percentage of the total number of packets that have contained errors, device-wide, during uptime.
% Host Bound	Yellow	The percentage of the total number of packets that have been delivered to the local host from the port during uptime.
In Packet Rate	Light Blue	The total number of packets that have been received, device-wide, during uptime.
Out Packet Rate	Turquoise	The total number of packets that have been transmitted, device-wide, during uptime.
Total Packet Rate	Royal Blue	The total number of packets that have been transmitted and received, device-wide, during uptime.
In Load	Green	The amount of bandwidth used per packets received during the port's uptime.
Out Load	Mustard Green	The amount of bandwidth used per packets transmitted during the port's uptime.
Total Load	Light Green	The amount of bandwidth used per packets received and transmitted during the port's uptime.

Multi-Attribute Line Graph Buttons

Buttons allow you to modify the statistical presentation of the Multi-Attribute Line Graph. The following buttons are provided:

Lin/Log

This button toggles between a linear or logarithmic scale presentation of the graph.

Scroll to Date-Time

This button allows you to set the viewing area of the graph to begin at a specified date and time.

Change Time Scale

This button allows you to specify the Y axis time scale for the graph.

Interface Options Panel

The Interface Options panel area of the Device view allows you to modify the presentation of the Logical Interface icon.

Filter
The Filter area of the Interface Options panel is only implemented if the SPECTRUM Routing Services Management Module is loaded. The Filter area of the Interface Options panel allows you to select routing protocol information on a per interface basis.

Network Information
The Network Information area of the Interface Options panel allows you to select what interface information is displayed in the Network Information label zone of all Logical Interface icons. Possible selections are ADDRESS, NAME, or MASK.

Interface Description
Selecting an Interface icon displays the type of interface in the Interface Description area of the Interface Options panel.

Gauge Control Panel

The Gauge Control panel allows you to change the type of statistical information presented in the Logical Gauge area of the Logical Interface icon. To access the Gauge Control panel, either double-click on the Interface Options panel or single-click on the panel to highlight it and then select **Gauge Control Panel** from the Icon Subviews menu.

Selected Attribute

This area of the Gauge Control panel allows you to select the statistical attribute displayed on the Logical Interface icon's gauge. The label changes color to reflect the attribute selected. Table 2-4 and Table 2-5 provide a list of the attributes and their corresponding colors.

Gauge Mode

This area of the Gauge Control panel allows you to select the mode presented by the Logical Gauge. Possible selections are Totals, Rates, or Percentages. The Percentages selection represents the percentage of the interface compared to the rest of the interfaces. Table 2-4 shows the displayed attributes and their color definitions if the Totals mode is selected. Table 2-5 shows the displayed attributes and their color definitions if the Rates mode is selected.

Table 2-4. GaugeTotals Mode Attribute and Color Definitions

Selected Attribute	Color
Errors	Orange
In Packets	Lt. Blue
Out Packets	Lt. Blue
In Octets	Green
Out Octets	Green
Discards	Tan
Forwarded	Lt. Purple
Host Bound	Yellow
Transmitted	White
Filtered	Gray

Table 2-5. GaugeRates Mode Attribute and Color Definitions

Selected Attribute	Color
Load	Green
Load In	Green
Load Out	Green
Packet Rate	Lt. Blue
In Packet Rate	Lt. Blue
Out Packet Rate	Lt. Blue
% Discard	Tan
% Filtered	Gray
% Forwarded	Lt. Violet
% Host Bound	Yellow

Table 2-5. GaugeRates Mode Attribute and Color Definitions (Continued)

Selected Attribute	Color
% Error	Orange
% Transmitted	White

Gauge Type

This option allows you to select either a numeric or linear representation of the Logical Gauge.

Gauge Control Panel Buttons

Several buttons allow you to control the way the Gauge Control panel selections affect the logical interface icon. The Gauge control panel provides the following buttons:

Apply
Apply the current selections to the Logical Gauge. The settings cannot be saved.

Keep Settings
Save the current gauge settings while running SpectroGRAPH.

Reset
Reset back to the last Keep Settings selections.

Close
Close the Gauge Control panel.

Default
Reset back to the default attribute of Load.

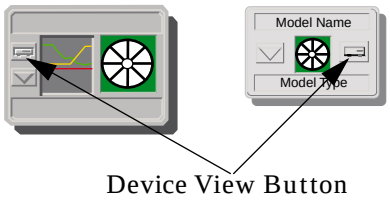
Physical Device View

This section describes the module information available from the MicroMMAC-T Physical Device view, which displays a physical representation of the MicroMMAC-T module and its stack. Figure illustrates the MicroMMAC-T's Physical Device view.

Accessing the Physical Device View

Access the Physical Device view using one of the following methods:

- Double-click on the Device view button of the MicroMMAC-T device icon. This will open the Device view that was opened last (i.e. Chassis, Interface or Physical).



- Highlight the MicroMMAC-T device icon and select **Device -> Physical** from the Icon Subviews menu.

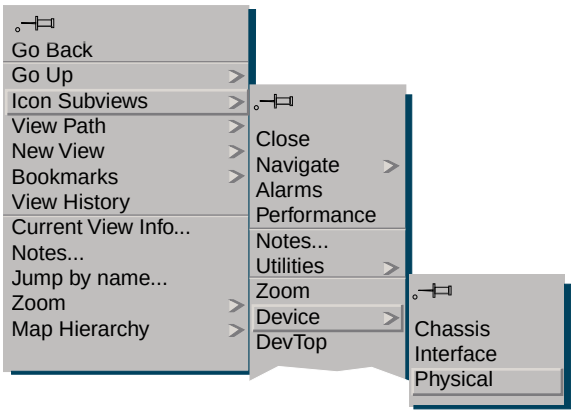
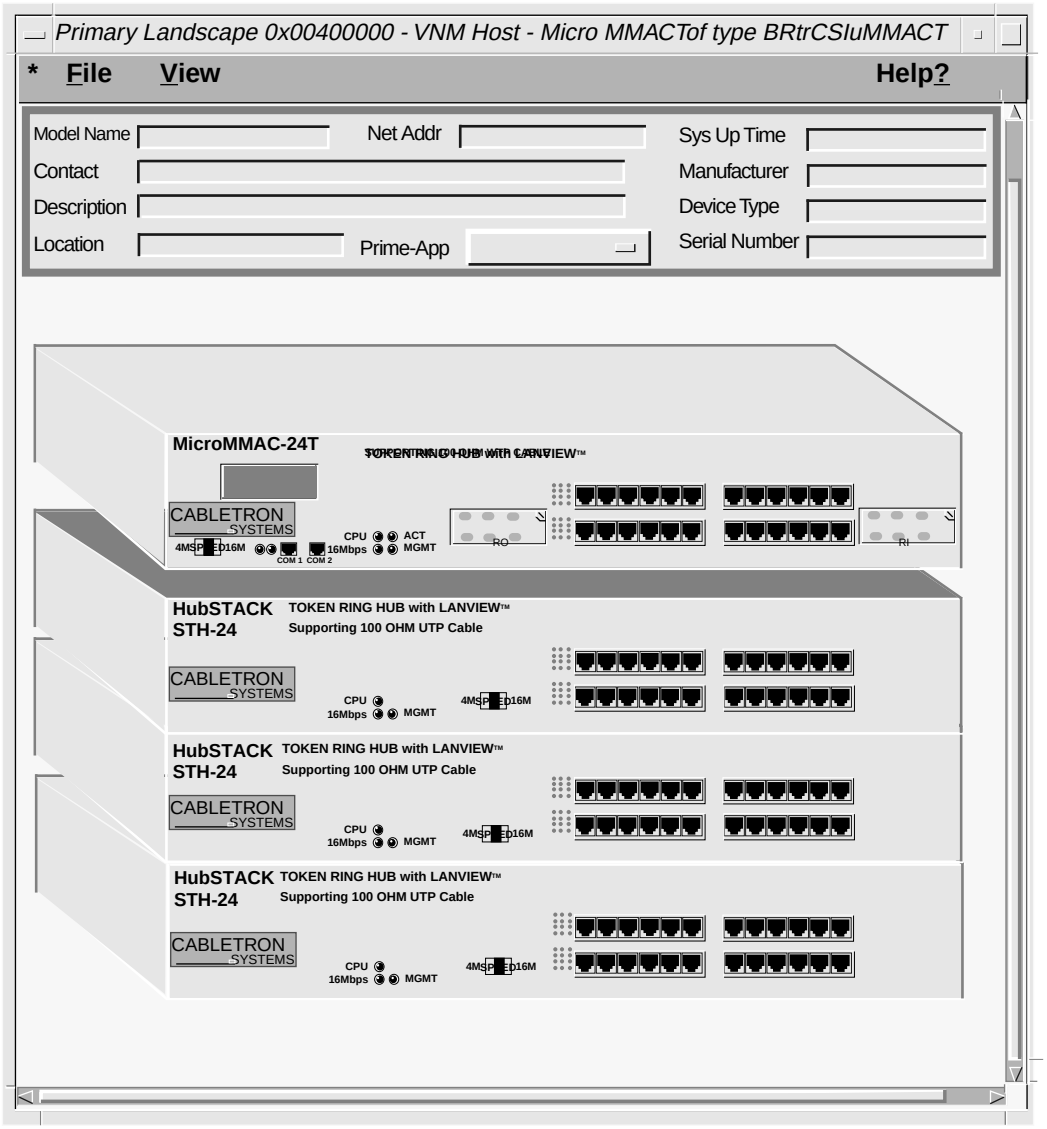


Figure 2-4. MicroMMAC-T Physical Device View



For a complete description of the status LEDs, refer to the ***MicroMMAC-T User's Guide.***

Table 2-6 lists and describes the menu options available for the MicroMMAC-T module icon displayed in the Physical Device view.

Table 2-6. Physical Device View - Module Icon Menu Selections

Menu Selection	Description
Module Notes	Opens the Module Notes view.
Module Configuration	Opens the Module Configuration view, allowing for module port configuration as well.
Change FNB Status	Opens the Change FNB Status view, allowing the user to choose either Insert or Bypass as the FNB status for the module.
Change Module Mode	Opens the Change Module Mode view, allowing the user to choose either Management or Auto as the module's mode.
Enable All Station Ports	Opens the Enable All Station Ports view, allowing the user to enable all of the station ports for the module.
Enable All Ring Ports	Opens the Enable All Ring Ports view, allowing the user to enable all of the ring ports for the module.

Chapter 3

Configuration Views

What is in This Chapter

This chapter provides descriptions of the configuration views that are available for the MicroMMAC-T. These views allow you to access and change configuration information for the MicroMMAC-T. The following configuration views are documented in this chapter:

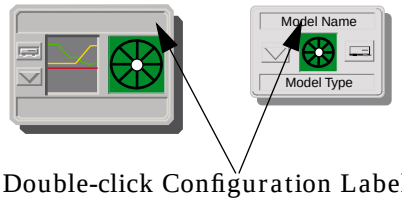
- Device
- Interface
- Module
- Port

MicroMMAC-T Device Configuration View

The MicroMMAC-T Device Configuration view provides information on the configuration and operating status of the MicroMMAC-T.

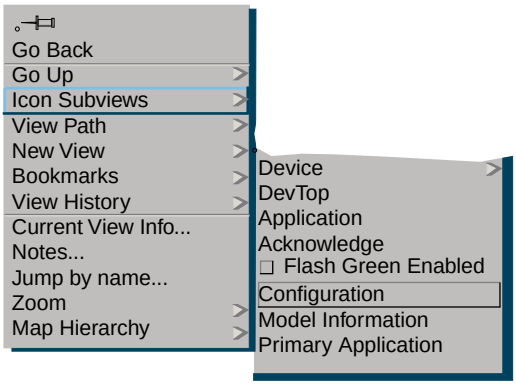
You can access the Device Configuration view through the Icon Subviews Menu, or the icon double-click zones.

Accessing the Configuration View



Double-click Configuration Label

- Highlight the MicroMMAC-T device icon and select **Configuration** from the Icon Subviews menu.



The Device Configuration view provides the following information:

Contact Status
This field indicates contact with the device has been established.

Firmware Revision
The firmware revision for the device being modeled.

Hardware Revision
The hardware revision for the device being modeled.

Component Table
Clicking on this button accesses the SPMA Community Name Tool, which lists the MicroMMAC-T components. For detailed information about the Community Name table, please refer to the *SPECTRUM Portable Management Application Tools Guide*.

Download Application
Clicking on this button accesses the DownLoad Application view. This view allows you to upgrade the firmware for a MicroMMAC-T from a TFTP Boot or Bootp Server. For more information on this view, refer to the *SPECTRUM Portable Management Application Tools Guide*.

Trap Table
Clicking on this button accesses the Trap Table, which allows the user to specify and enable traps for devices with access to the MicroMMAC-T. This SPMA utility is described in the *SPECTRUM Portable Management Application Tools Guide*.

Interface Configuration Table

The Interface Configuration table provides the following configuration information for each of the MicroMMAC-T's ports.

Number of Interfaces
Displays the number of interfaces available from this device.

Index
Displays the number of the interface.

Type
The type of hardware interface for the port. Possible interface types and a brief description of each type are shown in Table 3-1.

Phy Address
The Ethernet (MAC) address of the port.

Max Frame Size
The maximum frame size for the MicroMMAC-T interfaces.

Oper Status
The current operational state of this port (Up, Down, or Testing).

Table 3-1. MicroMMAC-T Interface Types

Interface Type	Description
other	None of the following
regular1822	Regular 1822
hdh1822	HDLC Distant Host protocol
ddn-X25	Defense Data Network X.25
rfc877-x25	RFC877 X.25
ethernet-csmacd	Ethernet CSMA/CD
iso88023-csmacd	ISO CSMA/CD
iso88024-tokenRing	ISO token bus
iso88025-tokenRing	ISO token ring
iso88026-man	ISO man
starLan	StarLAN IEEE 802.3
proteon-10Mbit	ProNET 10 Mbps
proteon-80Mbit	ProNET 80 Mbps
fddi	Fiber Distributed Data Interface
lapb	X.25 Line Access Procedure, Balanced
sdlc	IBM Synchronous Data Link Control protocol
ds1	T1 link (USA and Japan)
e1	T1 link (Europe)
basicISDN	Basic Integrated Services Digital Network
primaryISDN	Primary Integrated Services Digital Network
propPointToPointSerial	Proprietary Point to Point Serial
ppp	Point to Point protocol
softwareLoopback	Software Loopback
eon	Connectionless Network Protocol over IP
ethernet-3Mbit	Ethernet 3 Mbps
nsip	Xerox Network Service Protocol over IP
slip	Generic Serial Line IP
ultra	ULTRA Technologies
sip	Switched Multimegabit Data Service
frame-relay	T1 Frame relay

Module and Port Configuration Views

The Module or Port Configuration Views provide information on the configuration and operating status of selected modules or ports. You can access the Module Configuration view from the MicroMMAC-T Chassis Device view by clicking on the module to highlight it and then selecting **Module Configuration** from the Icon Subviews menu. You can access the Port Configuration view from the MicroMMAC-T Chassis Device view by clicking on the port to highlight it and then selecting **Port Configuration** from the Icon Subviews menu.

Module Configuration View

This area of the Module Configuration view provides the following information for the selected module:

Module
The module number for the highlighted module.

Module Name
The name of the highlighted module.

Module Mode
The mode setting for the module (either Management, Auto, or Unknown).

Module Ring Speed
The operating speed of the ring (either 4 or 16 Mbps).

Module Speed Fault
Displays Fault if a station tries to connect at a ring speed different from that of the MicroMMAC-T.

Module Speed Fault Location
Displays on which of the MicroMMAC-T's ports the module speed fault was found.

Module Port Configuration

This area of the Module Configuration view provides the following port information for the highlighted port:

Station Ports ON Out Of
Displays the number of Station ports on out of the total number of Station ports on the module.

Ring Ports ON Out Of
Displays how many Ring ports are on out of the module's total number of Ring ports.

Ports OPERATIONAL Out Of
Displays how many ports are operational out of the total number of the module's ports.

Enable ALL STATION Ports
The user may enable or disable all of the module's Station ports.

Enable ALL RING Ports
The user may enable or disable all of the module's Ring ports.

Enable ALL MODULE Ports
The user may enable or disable all of the module ports.

Chapter 4

Event and Alarm Messages

What Is in This Chapter

This chapter describes the types of events and alarms generated by the MicroMMAC-T and provides any probable cause messages corresponding to these alarms.

MicroMMAC-T Events and Alarms

SPECTRUM supports the following events for the MicroMMAC-T. Table 4-1 lists the generic events and alarms for MicroMMAC-T devices. To access the Event Log, choose **Utilities->Events** from the Icon Subviews menu. To access the Alarm Manager, choose **Alarms** from the Icon Subviews menu.

Table 4-1. MicroMMAC-T Events and Alarms

Message in the Event Log	Alarm View Probable Caulse Message
Event000d0001 {d "%w- %d %m-, %Y - %T"} Bridge {m} of type {t} has reported a root change (event [{e}]).	**Prob000d0001** This bridge has become the new root of the Spanning Tree.
Event000d0002 {d "%w- %d %m-, %Y - %T"} Bridge {m} of type {t} has reported a network topology change (event [{e}]).	**Prob000d0002** A port has transitioned from the Learning state to the Forwarding state, or from the Forwarding state to the Blocking state.
Event00420107 {d "%w- %d %m-, %Y - %T"} - MODULE REMOVAL - Device {m} of Type {t} reported that Module {I 1} has been Removed. - (event [{e}])	**Prob00420107** MODULE REMOVAL SYMPTOMS: A Module within this Chassis has been Removed or has Failed.
Event00420108 {d "%w- %d %m-, %Y - %T"} - MODULE INSERTION - Device {m} of Type {t} reported that a Module has been Inserted into Slot {I 1}. - (event [{e}])	No probable cause message
Event00420119 {d "%w- %d %m-, %Y - %T"} - TEMPERATURE WARM - Device {m} of Type {t} reported that the Module {I 1} Temperature is Warm. - (event [{e}])	**Prob00420119** TEMPERATURE WARM SYMPTOMS: The Module may be defective or a fan has failed in the Chassis. RECOMMENDED ACTIONS: 1) Verify that Module is not defective. 2) Check for fans failures in the Chassis and repair as needed.

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event0042011a {d "%w- %d %m-, %Y - %T"} - TEMPERATURE HOT - Device {m} of Type {t} reported that the Module {I 1} Temperature is Hot. - (event [{e}])	**Prob0042011a** TEMPERATURE HOT SYMPTOMS: A Module may be defective or a fan has failed in the Chassis. A serious heat condition is present and should be addressed immediately. RECOMMENDED ACTIONS: 1) Verify that Module is not defective. 2) Check for fans failures in the Chassis and repair as needed.
Event0042011b {d "%w- %d %m-, %Y - %T"} - VOLTAGE LOW - Device {m} of Type {t} reported that the Slot {I 1} Power Supply Voltage is Low. - (event [{e}])	**Prob0042011b** VOLTAGE LOW SYMPTOMS: The internal voltage of the Power Supply Module is Low. PROBABLE CAUSES: 1) The Power Supply unit is defective. 2) An AC Power Failure has occurred in the Power Supply. RECOMMENDED ACTIONS: 1) Check the Power Supply unit on device. 2) Check Power source to device.
Event0042011c {d "%w- %d %m-, %Y - %T"} - TEMPERATURE NORMAL - Device {m} of Type {t} reported that the Module {I 1} Temperature is Normal. - (event [{e}])	No probable cause message

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event0042011d {d "%w- %d %m-, %Y - %T"} - VOLTAGE NORMAL - Device {m} of Type {t} reported that the Slot {I 1} Power Supplly Voltage is Normal. - (event [{e}])	No probable cause message
Event0042011e {d "%w- %d %m-, %Y - %T"} - FAN ABNORMAL - Device {m} of Type {t} reported that a fan in the chassis has failed or is operating at an abnormal RPM rate. - (event [{e}])	**Prob0042011e** FAN ABNORMAL SYMPTOMS: A problem has been detected with a cooling fan or the fan tray assembly for this device. RECOMMENDED ACTIONS: This failure should be addressed before overheating causes damage to the device. Check for fans failures in the chassis and repair as needed.
Event0042011f {d "%w- %d %m-, %Y - %T"} - FAN NORMAL - Device {m} of Type {t} reported that a fan in the chassis has resumed normal operation. - (event [{e}])	No probable cause message

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00420125 {d "%w- %d %m-, %Y - %T"} - VOLTAGE LOW - Device {m} of Type {t} reported that thesystem power supply voltage is low. - (event [{e}])	**Prob00420125** VOLTAGE LOW SYMPTOMS: The internal voltage of the System Power Supply is Low. PROBABLE CAUSES: 1) The Power Supply unit is defective. 2) An AC Power Failure has occurred in the System Power Supply. RECOMMENDED ACTIONS: 1) Check the System Power Supply unit on the device. 2) Check Power source to device.
Event00420126 {d "%w- %d %m-, %Y - %T"} - VOLTAGE NORMAL - Device {m} of Type {t} reported that the System Power Supply Voltage has returned to Normal. - (event [{e}])	No probable cause message
Event00420136 {d "%w- %d %m-, %Y - %T"} - MODULE INSERTION - Device {m} of Type {t} reported that a Module has been Inserted into Slot {I 1}. - (event [{e}])	**Prob00420136** MODULE INSERTION SYMPTOMS: A Module has been Inserted into this Chassis.
Event00420201 {d "%w- %d %m-, %Y - %T"} - PORT INSERTED - Device {m} of Type {t} reported that a Station has been Inserted into Port {I 2} in Module {I 1}.- (event [{e}])	No probable cause message.

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00420202 {d "%w- %d %m-, %Y - %T"} - PORT DEINSERTED - Device {m} of Type {t} reported that a Station has been DeInserted from Port {I 2} in Module {I 1}. - (event [{e}])	No probable cause message
Event00420203 {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT - Device {m} of Type {t} reported that Module {I 1} has entered the Ring Speed Fault State. - (event [{e}])	**Prob00420203** RING SPEED FAULT SYMPTOMS: A Token Ring Module has entered the Ring Speed Fault State. PROBABLE CAUSES: 1) A Station or Ring Port attaching with a different speed than this Module is configured for. RECOMMENDED ACTIONS: 1) Detach the Station or Ring Port from the Module. 2) Re-configure the Station or Ring Port speed to match the speed of the affected Module. 3) Re-attach the Station or Ring Port to the Module.
Event00420204 {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT CLEARED - Device {m} of Type {t} reported that Module {I 1} has left the Ring Speed Fault State. - (event [{e}])	No probable cause message

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00420205 {d "%w- %d %m-, %Y - %T"} - RING PORT FAULTED - Device {m} of Type {t} reported that Ring Port {I 2} in Module {I 1} has entered the Wrapped State while its Management State was Enabled. - (event [{e}])	**Prob00420205** RING PORT FAULTED SYMPTOMS: A Ring Port has entered the Wrapped State while its Management State was Enabled. PROBABLE CAUSES: 1) Bad cable connected to affected Port. 2) Device is down at other end of the cable. 3) Device connection is bad at other end of the cable. RECOMMENDED ACTIONS: 1) Check cable connected to affected Port. 2) Power up Device at other end of the cable. 3) Check Device connection at other end of the cable.
Event00420206 {d "%w- %d %m-, %Y - %T"} - RING PORT FAULT CLEARED - Device {m} of Type {t} reported that Ring Port {I 2} in Module {I 1} has left the Wrapped State. - (event [{e}])	No probable cause message

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00420207 {d "%w- %d %m-, %Y - %T"} - BEACON STATE - Device {m} of Type {t} reported that a Beacon State has been detected. The Upstream Neighbor Station is {X 3}. - (event [{e}])	**Prob00420207** BEACON STATE SYMPTOMS: A Station attached to this Device has detected a new Beacon on the Ring while the Ring was in Operational State. PROBABLE CAUSES: 1) The cable between this Station and its Upstream Neighbor. 2) The Token Ring Card in the Upstream Neighbor Station is Bad. 3) This Station's Token Ring Card is Bad. RECOMMENDED ACTIONS: 1) Check the cable between this Station and its Upstream Neighbor. 2) Check the Token Ring Card in the Upstream Neighbor Station. 3) Check this Station's Token Ring Card.
Event00420208 {d "%w- %d %m-, %Y - %T"} - BEACON STATE CLEARED - Device {m} of Type {t} reported that the Last Beacon of Type has been cleared.	No probable cause message
Event00420209 {d "%w- %d %m-, %Y - %T"} - STATION ADDED - Device {m} of Type {t} reported that Station {X 1} has been Added to the Allowed Station List. - (event [{e}])	**Prob00420209** RING SECURITY BREACH - STATION ADDED Unauthorized Station has become attached to the Ring.

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event0042020a {d "%w- %d %m-, %Y - %T"} - STATION REMOVED - Device {m} of Type {t} reported that Station {X 1} has been Removed from the Allowed Station List. - (event [{e}])	**Prob0042020a** RING SECURITY BREACH - STATION REMOVED Unauthorized Station has attempted to attach itself to the Ring. Station was successfully removed from the Ring.
Event0042020b {d "%w- %d %m-, %Y - %T"} - RING CONFIGURATION CHANGED - Device {m} of Type {t} reported that its Ring Configuration has changed. - (event [{e}])	No probable cause message
Event0042020c {d "%w- %d %m-, %Y - %T"} - PORT REMOVED DURING FAULT RECOVERY - Device {m} of Type {t} reported that Port {I 1} in Module {I 2} was Removed from the Ring during a Fault Recovery Condition. - (event [{e}])	**Prob0042020c** PORT REMOVED DURING FAULT RECOVERY SYMPTOMS: A Port was Removed from the Ring during a Fault Recovery Condition. PROBABLE CAUSES: 1) Bad cable connected to Removed Port. 2) Device connection is bad at other end of the cable. RECOMMENDED ACTIONS: 1) Check cable connected to Removed Port. 2) Check Device connection at other end of the cable. 3) After problem is resolved, Enable the Removed Port.

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event0042020d {d "%w- %d %m-, %Y - %T"} - BOARD BYPASSED DURING FAULT RECOVERY - Device {m} of Type {t} reported that Module {I 1} was Bypassed during a Fault Recovery Condition. - (event [{e}])	**Prob0042020d** BOARD BYPASSED DURING FAULT RECOVERY SYMPTOMS: A Module was Bypassed during a Fault Recovery Condition. PROBABLE CAUSES: 1) This Module is configured with a different Ring Speed than the Hub. RECOMMENDED ACTIONS: 1) Pull out the Bypassed Module from the Hub. 2) Re-configure this Module's Ring Speed to match that of the Hub. 3) Physically insert the Module back into the Hub. 4) Set this Module's Bypass State to Inserted.
Event0042020e {d "%w- %d %m-, %Y - %T"} - PORT VIOLATION - Device {m} of Type {t} reported that Port {I 2} in Module {I 1} has detected a Link while the Port's Management State was Disabled. - (event [{e}])	No probable cause message
Event0042020f {d "%w- %d %m-, %Y - %T"} - PORT VIOLATION CLEARED - Device {m} of Type {t} reported that Port {I 2} in Module {I 1} has detected an Unlink while the Port's Management State was Disabled. - (event [{e}])	No probable cause message

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00420210 {d "%w- %d %m-, %Y - %T"} - FAULT RECOVERY OSCILLATION - Device {m} of Type {t} reported that the Ring is oscillating. - (event [{e}])	**Prob00420210** FAULT RECOVERY OSCILLATION SYMPTOMS: The Ring is oscillating. Oscillation occurs when the Ring fails a short time after recovery.
Event00420211 {d "%w- %d %m-, %Y - %T"} - RING PURGE THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Purge Threshold Value of {I 1} has been Exceeded within the Timebase Value of {I 2}. - (event [{e}])	**Prob00420211** RING PURGE THRESHOLD EXCEEDED SYMPTOMS: The Ring Purge Threshold Value has been Exceeded. A Ring Purge is used to make the Ring return to a normal condition. PROBABLE CAUSE: An Active Monitor will initiate the Ring Purge process when: 1) A Token Error condition is detected by the Active Monitor. 2) An adapter becomes the Active Monitor in the Monitor Contention Process.

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00420212 {d "%w- %d %m-, %Y - %T"} - RING ACTIVE MONITOR ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Active Monitor Errors Threshold Value of {I 1} has been Exceeded within the Timebase Value of {I 2}. - (event [{e}])	**Prob00420212** RING ACTIVE MONITOR ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Ring Active Monitor Errors Threshold Value has been Exceeded. PROBABLE CAUSES: 1) The Active Monitor may have received a Ring Purge or an Active Monitor Present frame that it did not transmit. 2) The Active Monitor may have received a Claim Token MAC frame which indicates that a duplicate Active Monitor or another Station has detected an error within the Active Monitor.
Event00420213 {d "%w- %d %m-, %Y - %T"} - RING TOKEN ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Token Errors Threshold Value of {I 1} has been Exceeded within the Timebase Value of {I 2}. - (event [{e}])	**Prob00420213** RING TOKEN ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Ring Token Errors Threshold Value has been Exceeded. PROBABLE CAUSE: The Active Monitor has recognized an error condition that requires a Token to be transmitted. This occurs when the timer for a valid transmission expires (10ms).

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00420214 {d "%w- %d %m-, %Y - %T"} - RING CLAIM TOKEN THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Claim Token Threshold Value of {I 1} has been Exceeded within the Timebase Value of {I 2}. - (event [{e}])	**Prob00420214** RING CLAIM TOKEN THRESHOLD EXCEEDED SYMPTOMS: The Ring Claim Token Threshold Value has been Exceeded. PROBABLE CAUSES: When a Station in Standby Monitor state has determined that there is no Active Monitor operating on the Ring. If the Station claims the Token, it becomes the new Active Monitor for the Ring.
Event00420215 {d "%w- %d %m-, %Y - %T"} - RING LOST FRAMES THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Lost Frames Threshold Value of {I 1} has been Exceeded within the Timebase Value of {I 2}. - (event [{e}])	**Prob00420215** RING LOST FRAMES THRESHOLD EXCEEDED SYMPTOMS: The Ring Lost Frames Threshold Value has been Exceeded. PROBABLE CAUSE: The Ring Lost Frame Error occurs when a Station is transmitting and its timer for return expires. The Lost Frame count keeps track of how many frames transmitted by a Station fail to return. If a frame becomes lost the Active Monitor will issue a new Token.

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00420216 {d "%w- %d %m-, %Y - %T"} - RING BEACON STATE THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Beacon State Threshold Value of {I 1} has been Exceeded within the Timebase Value of {I 2}. - (event [{e}])	**Prob00420216** RING BEACON STATE THRESHOLD EXCEEDED SYMPTOMS: The Ring Beacon State Threshold Value has been Exceeded. PROBABLE CAUSE: When a Station determines that a serious Ring failure has occured it will generate a Beacon MAC frame.
Event00420217 {d "%w- %d %m-, %Y - %T"} - RING FRAME COUNT THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Frame Count Threshold Value of {I 1} has been Exceeded within the Timebase Value of {I 2}. - (event [{e}])	**Prob00420217** RING FRAME COUNT THRESHOLD EXCEEDED SYMPTOMS: The Ring Frame Count Threshold Value has been Exceeded.
Event00420218 {d "%w- %d %m-, %Y - %T"} - STATION LINE ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 3} has Exceeded the Line Errors Threshold Value of {I 1} within the Timebase Value of {I 2}. - (event [{e}])	No probable cause message
Event00420219 {d "%w- %d %m-, %Y - %T"} - STATION INTERNAL ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 3} has Exceeded the Internal Errors Threshold Value of {I 1} within the Timebase Value of {I 2}. - (event [{e}])	No probable cause message

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event0042021a {d "%w- %d %m-, %Y - %T"} - STATION BURST ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 3} has Exceeded the Burst Errors Threshold Value of {I 1} within the Timebase Value of {I 2}. - (event [{e}])	No probable cause message
Event0042021b {d "%w- %d %m-, %Y - %T"} - STATION A/C ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 3} has Exceeded the A/C Errors Threshold Value of {I 1} within the Timebase Value of {I 2}. - (event [{e}])	No probable cause message
Event0042021c {d "%w- %d %m-, %Y - %T"} - STATION RECEIVER CONGESTION THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 3} has Exceeded the Receiver Congestion Threshold Value of {I 1} within the Timebase Value of {I 2}. - (event [{e}])	No probable cause message
Event0042021d {d "%w- %d %m-, %Y - %T"} - STATION REMOVE FAILURE - Device {m} of Type {t} reported that Station {X 1} could not be Removed from the Ring after three attempts.	Prob0042021d RING SECURITY BREACH - STATION REMOVE FAILURE Unauthorized Station has attempted and succeeded in attaching itself to the Ring. After 3 consecutive tries, the Station was not successfully removed from the Ring.
Event00420220 {d "%w- %d %m-, %Y - %T"} - PORT INSERTED - Device {m} of Type {t} reported that a Station has been Inserted into Board {I 1}, Port Group {I 2}, Port {I 3}. - (event [{e}])	No probable cause message

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00420221 {d "%w- %d %m-, %Y - %T"} - PORT DEINSERTED - Device {m} of Type {t} reported that a Station has been DeInserted from Board {I 1}, Port Group {I 2}, Port {I 3}. - (event [{e}])	No probable cause message
Event00420222 {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT - Device {m} of Type {t} reported that Board {I 1} has entered the Ring Speed Fault State. - (event [{e}])	**Prob00420222** RING SPEED FAULT SYMPTOMS: A Token Ring Module has entered the Ring Speed Fault State. PROBABLE CAUSES: 1) A Station or Ring Port attaching with a different speed than this Module is configured for. RECOMMENDED ACTIONS: 1) Detach the Station or Ring Port from the Module. 2) Re-configure the Station or Ring Port speed to match the speed of the affected Module. 3) Re-attach the Station or Ring Port to the Module.
Event00420223 {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT CLEARED - Device {m} of Type {t} reported that Board {I 1} has left the Ring Speed Fault State. - (event [{e}])	No probable cause message

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00420224 {d "%w- %d %m-, %Y - %T"} - RING PORT FAULTED - Device {m} of Type {t} reported that Board {I 1}, Port Group {I 2}, Port {I 3} has entered the Wrapped State while its Management State was Enabled. - (event [{e}])	**Prob00420224** RING PORT FAULTED SYMPTOMS: A Ring Port has entered the Wrapped State while its Management State was Enabled. PROBABLE CAUSES: 1) Bad cable connected to affected Port. 2) Device is down at other end of the cable. 3) Device connection is bad at other end of the cable. RECOMMENDED ACTIONS: 1) Check cable connected to affected Port. 2) Power up Device at other end of the cable. 3) Check Device connection at other end of the cable.
Event00420225 {d "%w- %d %m-, %Y - %T"} - RING PORT FAULT CLEARED - Device {m} of Type {t} reported that Board {I 1}, Port Group {I 2}, Port {I 3} has left the Wrapped State. - (event [{e}])	No probable cause message

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00420226 {d "%w- %d %m-, %Y - %T"} - BEACON STATE - Device {m} of Type {t} reported that Beacon Type {I 8} has been detected on Ring {I 1} from station {T string 2}, address {X 3}. The Upstream Neighbor Station is {X 4}, Board {I 5}, Port Group {I 6}, Port {I 7}. - (event [{e}])	**Prob00420226** BEACON STATE SYMPTOMS: A Station attached to this Device has detected a new Beacon on the Ring while the Ring was in Operational State. PROBABLE CAUSES: 1) The cable between this Station and its Upstream Neighbor. 2) The Token Ring Card in the Upstream Neighbor Station is Bad. 3) This Station's Token Ring Card is Bad. RECOMMENDED ACTIONS: 1) Check the cable between this Station and its Upstream Neighbor. 2) Check the Token Ring Card in the Upstream Neighbor Station. 3) Check this Station's Token Ring Card.
Event00420227 {d "%w- %d %m-, %Y - %T"} - BEACON STATE CLEARED - Device {m} of Type {t} reported that the Last Beacon on Ring {I 1} has been cleared.	No probable cause message
Event00420228 {d "%w- %d %m-, %Y - %T"} - STATION ADDED - Device {m} of Type {t} reported that Station {X 2} on Ring {I 1} has been Added to the Allowed Station List. - (event [{e}])	**Prob00420228** RING SECURITY BREACH - STATION ADDED Unauthorized Station has become attached to the Ring.

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00420229 {d "%w- %d %m-, %Y - %T"} - STATION REMOVED - Device {m} of Type {t} reported that Station {X 2} on Ring {I 1} has been Removed from the Allowed Station List. - (event [{e}])	**Prob00420229** RING SECURITY BREACH - STATION REMOVED Unauthorized Station has attempted to attach itself to the Ring. Station was successfully removed from the Ring.
Event0042022c {d "%w- %d %m-, %Y - %T"} - PORT REMOVED DURING FAULT RECOVERY - Device {m} of Type {t} reported that Board {I 1}, Port Group {I 2}, Port {I 3} was Removed from the Ring during a Fault Recovery Condition. - (event [{e}])	**Prob0042022c** PORT REMOVED DURING FAULT RECOVERY SYMPTOMS: A Port was Removed from the Ring during a Fault Recovery Condition. PROBABLE CAUSES: 1) Bad cable connected to Removed Port. 2) Device connection is bad at other end of the cable. RECOMMENDED ACTIONS: 1) Check cable connected to Removed Port. 2) Check Device connection at other end of the cable. 3) After problem is resolved, Enable the Removed Port.

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event0042022e {d "%w- %d %m-, %Y - %T"} - BOARD BYPASSED DURING FAULT RECOVERY - Device {m} of Type {t} reported that Board {I 1} was Bypassed during a Fault Recovery Condition. - (event [{e}])	**Prob0042022e** BOARD BYPASSED DURING FAULT RECOVERY SYMPTOMS: A Module was Bypassed during a Fault Recovery Condition. PROBABLE CAUSES: 1) This Module is configured with a different Ring Speed than the Hub. RECOMMENDED ACTIONS: 1) Pull out the Bypassed Module from the Hub. 2) Re-configure this Module's Ring Speed to match that of the Hub. 3) Physically insert the Module back into the Hub. 4) Set this Module's Bypass State to Inserted.
Event0042022f {d "%w- %d %m-, %Y - %T"} - PORT VIOLATION - Device {m} of Type {t} reported that Board {I 1}, Port Group {I 2}, Port {I 3} has detected a Link while the Port's Management State was Disabled. - (event [{e}])	No probable cause message
Event00420230 {d "%w- %d %m-, %Y - %T"} - PORT VIOLATION CLEARED - Device {m} of Type {t} reported that Board {I 1}, Port Group{I 2} in Port {I 3} has detected an Unlink while the Port's Management State was Disabled. - (event [{e}])	No probable cause message

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00420231 {d "%w- %d %m-, %Y - %T"} - RING PURGE THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Purge Threshold Value of {I 2} has been Exceeded within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**Prob00420231** RING PURGE THRESHOLD EXCEEDED SYMPTOMS: The Ring Purge Threshold Value has been Exceeded. A Ring Purge is used to make the Ring return to a normal condition. PROBABLE CAUSE: An Active Monitor will initiate the Ring Purge process when: 1) A Token Error condition is detected by the Active Monitor. 2) An adapter becomes the Active Monitor in the Monitor Contention Process.
Event00420232 {d "%w- %d %m-, %Y - %T"} - RING ACTIVE MONITOR ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Active Monitor Errors Threshold Value of {I 2} has been Exceeded within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**Prob00420232** RING ACTIVE MONITOR ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Ring Active Monitor Errors Threshold Value has been Exceeded. PROBABLE CAUSES: 1) The Active Monitor may have received a Ring Purge or an Active Monitor Present frame that it did not transmit. 2) The Active Monitor may have received a Claim Token MAC frame which indicates that a duplicate Active Monitor or another Station has detected an error within the Active Monitor.

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00420233 {d "%w- %d %m-, %Y - %T"} - RING TOKEN ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Token Errors Threshold Value of {I 2} has been Exceeded within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**Prob00420233** RING TOKEN ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Ring Token Errors Threshold Value has been Exceeded. PROBABLE CAUSE: The Active Monitor has recognized an error condition that requires a Token to be transmitted. This occurs when the timer for a valid transmission expires (10ms).
Event00420234 {d "%w- %d %m-, %Y - %T"} - RING CLAIM TOKEN THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Claim Token Threshold Value of {I 2} has been Exceeded within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**Prob00420234** RING CLAIM TOKEN THRESHOLD EXCEEDED SYMPTOMS: The Ring Claim Token Threshold Value has been Exceeded. PROBABLE CAUSES: When a Station in Standby Monitor state has determined that there is no Active Monitor operating on the Ring. If the Station claims the Token, it becomes the new Active Monitor for the Ring.

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00420235 {d "%w- %d %m-, %Y - %T"} - RING LOST FRAMES THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Lost Frames Threshold Value of {I 2} has been Exceeded within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**Prob00420235** RING LOST FRAMES THRESHOLD EXCEEDED SYMPTOMS: The Ring Lost Frames Threshold Value has been Exceeded. PROBABLE CAUSE: The Ring Lost Frame Error occurs when a Station is transmitting and its timer for return expires. The Lost Frame count keeps track of how many frames transmitted by a Station fail to return. If a frame becomes lost the Active Monitor will issue a new Token.
Event00420236 {d "%w- %d %m-, %Y - %T"} - RING FRAME COUNT THRESHOLD EXCEEDED - Device {m} of Type {t} reported that the Ring Frame Count Threshold Value of {I 2} has been Exceeded within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**Prob00420236** RING FRAME COUNT THRESHOLD EXCEEDED SYMPTOMS: The Ring Frame Count Threshold Value has been Exceeded.
Event00420237 {d "%w- %d %m-, %Y - %T"} - STATION LINE ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 4} has Exceeded the Line Errors Threshold Value of {I 2} within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**Prob00420237** LINE ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Line Errors Threshold Value has been Exceeded.

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00420238 {d "%w- %d %m-, %Y - %T"} - STATION INTERNAL ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 4} has Exceeded the Internal Errors Threshold Value of {I 2} within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**Prob00420238** LOST INTERNAL ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Lost Internal Errors Threshold Value has been Exceeded.
Event00420239 {d "%w- %d %m-, %Y - %T"} - STATION BURST ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 4} has Exceeded the Burst Errors Threshold Value of {I 2} within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**Prob00420239** LOST BURST ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Lost Burst Errors Threshold Value has been Exceeded.
Event0042023a {d "%w- %d %m-, %Y - %T"} - STATION A/C ERRORS THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 4} has Exceeded the A/C Errors Threshold Value of {I 2} within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**Prob0042023a** ADDRESS/COPIED ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Address/Copied Errors Threshold Value has been Exceeded.
Event0042023b {d "%w- %d %m-, %Y - %T"} - STATION RECEIVER CONGESTION THRESHOLD EXCEEDED - Device {m} of Type {t} reported that Station {X 4} has Exceeded the Receiver Congestion Threshold Value of {I 2} within the Timebase Value of {I 3} for Ring {I 1}. - (event [{e}])	**Prob0042023b** RECEIVER CONGESTION ERRORS THRESHOLD EXCEEDED SYMPTOMS: The Receiver Congestion Errors Threshold Value has been Exceeded.

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event0042022a {d "%w- %d %m-, %Y - %T"} - STATION REMOVE FAILURE - Device {m} of Type {t} reported that Station {X 2} could not be Removed from Ring {I 1} after three attempts.	**Prob0042022a** RING SECURITY BREACH - STATION REMOVE FAILURE Unauthorized Station has attempted and succeeded in attaching itself to the Ring. After 3 consecutive tries, the Station was not successfully removed from the Ring.
Event0042023c {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT - Device {m} of Type {t} reported that Board {I 1}, Port Group {I 2}, Port {I 3} has entered the Ring Speed Fault State. - (event [{e}])	No probable cause message
Event0042023d {d "%w- %d %m-, %Y - %T"} - RING SPEED FAULT CLEARED - Device {m} of Type {t} reported that Board {I 1}, Port Group, {I 2}, Port {I 3} has left the Ring Speed Fault State. - (event [{e}])	No probable cause message
Event0042022b {d "%w- %d %m-, %Y - %T"} - RING SECURITY BREAK - Device {m} of Type {t} reported that a Token Ring Station Port was removed during a security recovery. Board {I 1}, Port Group {I 2}, Port {I 3}.	No probable cause message
Event0042022d {d "%w- %d %m-, %Y - %T"} - PORT GROUP REMOVED DURING FAULT RECOVERY - Device {m} of Type {t} reported Board {I 1} Port Group {I 2} was Bypassed. - (event [{e}])	No probable cause message

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event0042023e {d "%w- %d %m-, %Y - %T"} - TR TPIM INSTALLED - Device {m} of Type {t} reported a TPIM was inserted on Board {I 1}, Port Group {I 2}, Port {I 3}. - (event [{e}])	No probable cause message
Event0042023f {d "%w- %d %m-, %Y - %T"} - TR TPIM REMOVED - Device {m} of Type {t} reported a TPIM was removed on Board {I 1}, Port Group {I 2}, Port {I 3}. - (event [{e}])	No probable cause message
Event00420240 {d "%w- %d %m-, %Y - %T"} - NEIGHBOR NOTIFICATION FAILED - Device {m} of Type {t} reported that neighbor notification process has not completed on Ring {I 1}. - (event [{e}])	No probable cause message
Event00420241 {d "%w- %d %m-, %Y - %T"} - FAULT RECOVERY OSCILLATION - Device {m} of Type {t} reported that Ring {I 1} is oscillating. - (event [{e}])	**Prob00420241** FAULT RECOVERY OSCILLATION SYMPTOMS: The Ring is oscillating. Oscillation occurs when the Ring fails a short time after recovery.
Event00010810 {d "%w- %d %m-, %Y - %T"} - RMON rising threshold trap received from model {m} of type {t}. AlarmIndex {I 1}, AlarmVariable {O 2}, AlarmSampleType {I 3}, AlarmValue {I 4} and AlarmRisingThreshold {I 5}. (event [{e}])	**Prob00010810** Remote Monitor Rising Alarm Threshold Exceeded This trap will be generated when the value of the trap exceeds the rising threshold for the alarm.

Table 4-1. MicroMMAC-T Events and Alarms (Continued)

Message in the Event Log	Alarm View Probable Caulse Message
Event00010811 {d "%w- %d %m-, %Y - %T"} - RMON falling threshold trap received from model {m} of type {t}. AlarmIndex {I 1}, AlarmVariable {O 2}, AlarmSampleType {I 3}, AlarmValue {I 4} and AlarmFallingThreshold {I 5}. (event [{e}])	**Prob00010811** Remote Monitor Falling Alarm Threshold Exceeded This trap will be generated when the value of the trap exceeds the falling threshold for the alarm.
Event00010812 {d "%w- %d %m-, %Y - %T"} - RMON packet match trap received from model {m} of type {t}. Channel description: {S 3}. Channel had {I 2} matches. (event [{e}])	**Prob00010812** Packet Match Trap This trap will be generated when a packet is captured by a channel that is configured for sending SNMP traps.

Chapter 5

MicroMMAC -T Network Application

What Is in This Chapter

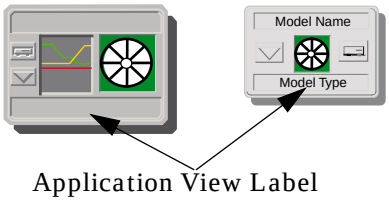
This chapter describe the Network application in the MicroMMAC-T's Application view, which allows you to view information relating to the ring in which the MicroMMAC-T is installed. This chapter lists the Icon Subviews available from the Network application icon and describes the following views:

- Cabletron Token Ring Station Table view
- Cabletron Token Ring Station Isolating Errors Table view
- Cabletron Token Ring Non-Isolating Errors Table view
- Cabletron Token Ring Ring Configuration view.

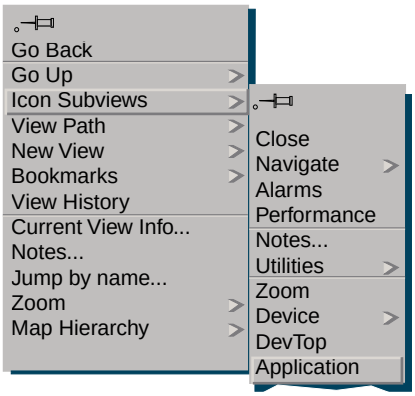
Accessing the MicroMMAC-T Application View

Access the Application view using one of the following methods:

- Double-click on the Application view label of the MicroMMAC-T device icon. This will open the Application view.

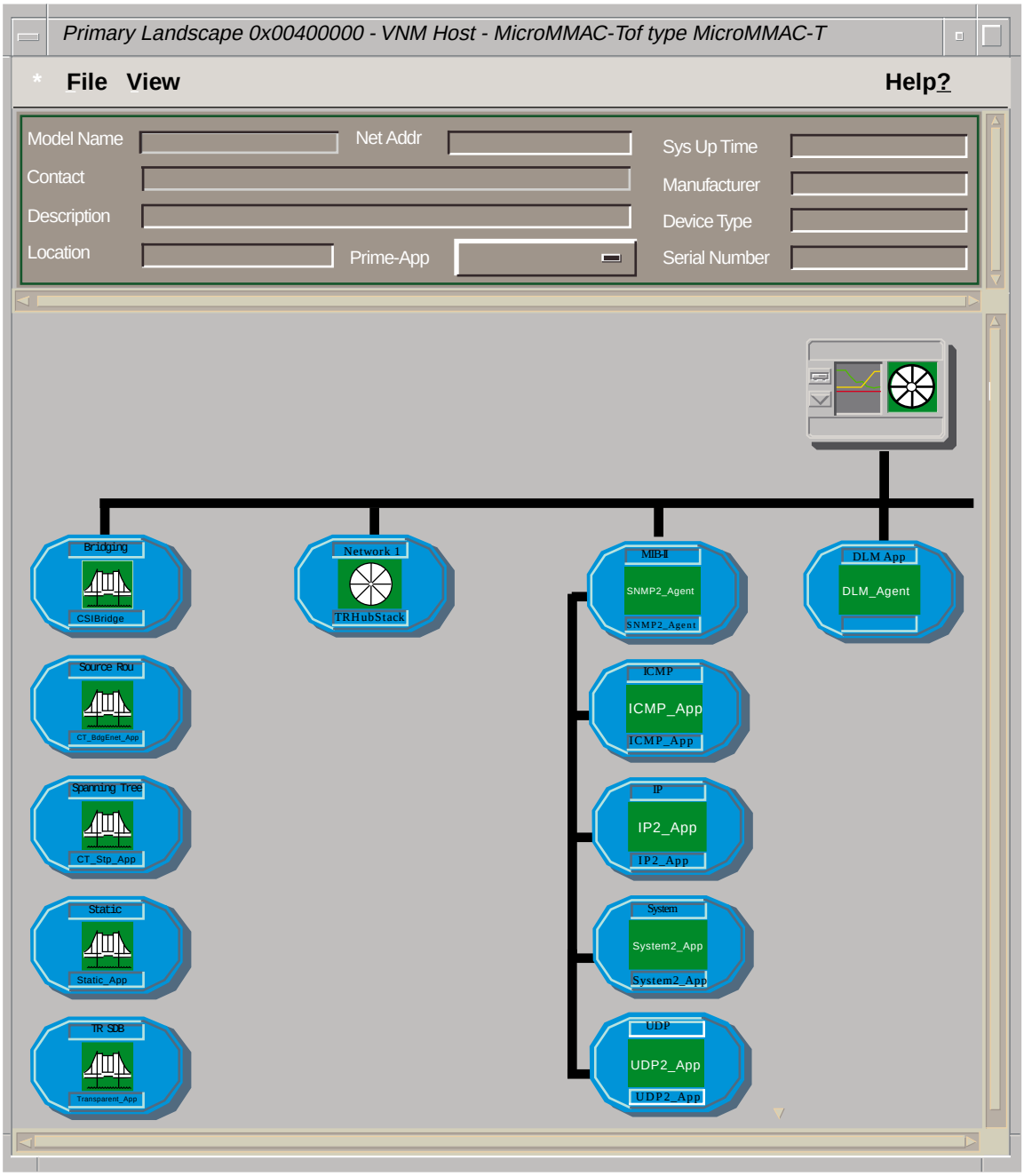


- Highlight the MicroMMAC-T device icon and select **Applications** from the Icon Subviews menu.



The Application view contains icons for all of the common and device-specific applications for the MicroMMAC-T. With the exception of the Network application, the MicroMMAC-T's applications are described in ***Miscellaneous Applications***.

Figure 5-1. MicroMMAC-T Application View



The Network Application

The Icon Subviews menu for the Network 1 icon provides access to the views listed in Table 5-1.

Table 5-1. Network Icon Subviews

View	Description
Device	Opens the MicroMMAC-T Device view. For more information on the Device view, refer to Chapter 2, *Device Views*.
DevTop	Opens the MicroMMAC-T DevTop view. For more information on the DevTop view, refer to ***SPECTRUM Views***.
Performance	Opens the MicroMMAC-T Performance view. For more information on the Performance view, refer to ***SPECTRUM Views***.
Stations	Opens the Cabletron Token Ring Station Table view. More information about the Cabletron Token Ring Station Table view follows this table.
Station Errors	Opens the Cabletron Token Ring Station Isolating Errors Table view. More information about this view follows this table.
Configuration	Opens the Cabletron Token Ring Ring Configuration view. More information about this view follows this table.

Cabletron Token Ring Station Table View

The Cabletron Token Ring Station Table view lists the stations connected to the ports of the MicroMMAC-T hub and provides access to other station views. The Station Table view serves as a starting point for several station management tasks.

A Device Banner appears at the top of the Station Table view, detailing information about the MicroMMAC-T device. Below this, characteristics of the ring are displayed. The values for Ring Name, Ring Number, Ring Speed, and Ring Status are included. The MAC address for the Active Monitor is shown just below the ring information, as are the access buttons for the Isolating Errors Table and the Alarms Table.

The main portion of the Cabletron Token Ring Station Table view consists of the station table itself, which lists each station connected to the MicroMMAC-T hub. Entries for each station consist of the station's address and name, number of frames passed, number of errors, and the module and port number for the station. The following buttons allow you to manipulate the station table data:

Update

Click this button to obtain the latest information for each station.

Totals/Delta

Click this button so that it shows the desired numerical display. For instance, if you want to see Frame and Error data since the station was first monitored by SPECTRUM, toggle the button so that it shows **Totals**. If you want to see the Frame and Error data since the table was last updated, toggle the button to **Delta**.

MAC/Canonical

Click this button so that it shows the desired station address format. The station addresses will be displayed either in the MAC or Canonical format.

Set Filter

Click on this button to configure or clear a filter for the chosen table field. The procedure for configuring a filter is outlined below.

Setting a Filter for Station Table Entries

1. Click on the table heading whose entries you'd like to filter.
2. Click on the Set Filter button.

   A dialog box appears and allows you to set a filter or clear a filter. Clearing a filter will result in all stations being displayed.
3. Enter the filter in the resulting dialog box.
4. Click OK.

Sort Up/Sort Down/Un-sort

Click this button to organize the entries for the chosen table entries into ascending or descending order. Toggling the button so that it displays Un-sort will undo any order previously specified.

Station Detail

Click this button to access the Cabletron Token Ring Station Detail view. The Station Detail view breaks down the stations' traffic into frames and errors and displays this information in a color-coded pie chart. Two other pie charts display the Isolating Errors and Non-Isolating Errors statistics. The Station Detail view also displays the up and downstream neighbors of the station, provides access to the Cabletron Token Ring Station Alarms Configuration view (described later in this chapter), and allows you to enable a station's removal from the ring if alarm thresholds are surpassed.

Station Alarms

Click this button to access the Station Alarm Dialog box. To configure an alarm for a particular station, follow the steps below.

1. Enter thresholds for Line, Internal, Burst, A/C and Congestion errors.
2. Click on the desired button to Enable or Disable each alarm.
3. Move the stations you'd like to apply the alarm configurations to into the ***Apply Settings to:*** list by double-clicking on the station's MAC address in the ***Stations*** list or by highlighting the station's address and clicking the navigation buttons that are between the two lists.
4. Click the **Apply** button to set the alarms for the selected stations.

Remove Station

Click this button to remove the highlighted station from the ring. A dialog box will prompt you to confirm the removal of the station.

Isolating Errors Table

The Cabletron Token Ring Station Isolating Errors view, accessed via the Station Table view's **Isolating Errors** button or the Icon Subviews menu for the Network application, lists the number of Line, Burst, A/C, Abort, and Internal errors for each station on the ring. The Isolating Errors view provides access to the Non-Isolating Errors Table, via the **Non-Isolating Errors**

Table button, and the Cabletron Token Ring Station Alarm Thresholds view, accessed via the **Alarms Table** button.

Non-Isolating Errors Table

Click this button to access the Cabletron Token Ring Station Non-Isolating Errors view. This table shows the number of Lost Frames, Congestions, FrameCopied, Token, and Frequency errors for each station on the ring.

Alarms Table

Click this button in any of the Station Table views to access the Cabletron Token Ring Station Alarm Thresholds view. This view lists the threshold for the Line, Burst, A/C, Internal, and Congestions errors for each station on the ring.

Cabletron Token Ring Ring Configuration View

This view displays the following Ring Configuration:

- Ring Name - -- You may define this by highlighting the text box and entering the desired name.
- Ring Number --Read Only
- Ring Speed --Read Only
- Ring Status --Read Only
- Active Monitor --Read Only
- Active Stations --Read Only
- Beacon Recovery --You may choose Disabled, Enabled, or Invalid for the Beacon Recovery status.

Setting Alarms for the Ring

To set alarm thresholds for the ring, follow the steps below.

1. Enter the desired threshold for the errors listed in the view.
    - Ring Purges
    - AMP Errors
    - Claim Token Errors
    - Lost Frames
    - Token Errors
    - Beacon State
    - Frame Count

2. Click the button next to the Threshold text box so that it displays the desired status for the alarm. (Enabled or Disabled)
3. Enter the Ring Timebase in the text box provided.
4. Choose **Save and Close** from the File menu.

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